

REMARKS

Claims 2, 9, 19, 21, 22, 24, and 26 have been amended.

Claims 1, 20, and 23 have been cancelled.

Claims 4-8, 10-18, and 25 were previously withdrawn.

New Claims 28-30 have been added.

Claims 2, 9, 19, 22, and 26 are independent form.

1. Rejections Under 35 U.S.C. § 102

The Examiner's rejection of Claims 19, 21, and 26 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,675,515 to *January* is respectfully traversed.

The MPEP §2131 provides:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." *Verdegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as contained in the ... claim" *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 9 USQP2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim.

a. Claim 19

The required limitation of amended Claim 19 of a unique fixed reference target structure associated with the service bay, disposed within a field of view of at least one camera from each movable camera system during a vehicle service procedure is not present in the '515 *January* reference. The '515 *January* reference teaches the use of a *portable and rotatable* target structure for placement on a vehicle lift rack surface as shown in Fig. 5. The target structure of the '515 *January* reference is rotated about an axis (or translated), and images of the associated targets captured by the two stationary

camera systems. (Col. 11, lines 11-45). The observation by each stationary camera system of the common rotational (or translational) movement of the '515 *January* target structure is used to establish a coordinate system transformation for use during a subsequent vehicle service procedure. The '515 *January* target structure is not *fixed*, and is not *associated with the service bay*. Rather, the '515 *January* target structure is rotatable and portable, and is temporarily disposed on a vehicle lift rack surface prior to the start of a vehicle service procedure.

Since the '515 *January* reference fails to disclose the required limitations of a unique fixed reference target structure which is associated with the service bay, disposed within a field of view of at least one camera from each movable camera system during a vehicle service procedure, Claim 19 is not anticipated under 35 U.S.C. § 102(b) by the '515 *January* reference.

b. Claim 21

As amended, Claim 21 requires that the processor be configured to store a plurality of calibration values for a plurality of service bays each having an associated unique reference target structure, and that the calibration values each be indexed to at least one of the associated unique reference target structures to identify the corresponding service bay. The '515 *January* reference fails to disclose a processor which is configured to store calibration values for a plurality of vehicle service bays, and correspondingly fails to disclose indexing of stored calibration values by unique reference target structures. The system disclosed in the '515 *January* reference is stationary, and does not store calibration values for a plurality of vehicle service bays, nor are any stored calibration values indexed by unique reference target structures.

Accordingly, Claim 21, as amended, is not anticipated under 35 U.S.C. § 102(b) by the '515 *January* reference.

c. Claim 26

As amended, Claim 26 clarifies that the reference targets in the first and second sets of optical targets, remain in fixed positions when the first and second camera systems acquire images there of, and that the common reference coordinate system is established using the predetermined relationship between the reference targets of the first and second sets of optical targets. Furthermore, the claim requires that at least one camera in the first camera system have a field of view which encompasses the reference target and an alignment target in the first set of optical targets, and that at least one camera in the second camera system have a field of view which encompasses the reference target and an alignment target in the second set of optical targets.

In contrast, the '515 *January* reference fails to disclose a method for configuring a machine vision vehicle wheel alignment system by establishing a common reference coordinate system using, in part, a predetermined relationship between said first and second reference targets in a fixed position. Rather, the '515 *January* reference requires first and second optical calibration targets (74, 75) to be either rotated about an axis (Col. 11, lines 21-45) or translated over a distance (Col. 12, lines 22-43) to establish a common reference coordinate system. The '515 *January* reference further fails to disclose the positioning of cameras to include both alignment targets and reference targets in the same field of view. Accordingly, Claim 26 as amended, is not anticipated under 35 U.S.C. § 102(b) by the '515 *January* reference.

2. Rejections Under 35 U.S.C. § 103

The Examiner's rejection of Claims 1-3, 20, 22-24, and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,675,515 to *January* in view of U.S. Patent No. 6,731,382 to *Jackson* is respectfully traversed.

a. Claim 1

Claim 1 has been cancelled without prejudice with respect to any future filings.

b. Claim 2

As amended, Claim 2 incorporates the limitations of now-cancelled independent Claim 1. Additional amendments to Claim 2 clarify that the first and second camera systems each have fields of view which encompass at least one optical target on associated sides of the vehicle, and that a fixed reference target structure is disposed within the same fields of view associated with the camera systems as the optical targets.

The cited combination of the '515 *January* reference and the '382 *Jackson* reference fails to render obvious the claimed limitations set forth in Claim 2. Specifically, the '515 *January* reference requires that the reference targets be either rotated or translated between different positions when images are acquired. While the '382 *Jackson* reference may overcome this limitation in the context of movable cameras, it does so by teaching the use of at least one dedicated calibration camera having a field of view which is focused exclusively on the reference targets, and which do not include any of the other optical targets used in the alignment procedures. (See: Figures 6a, 6b, 7, and 8). Nothing in the cited combinations renders obvious a machine vision vehicle wheel alignment system having movable camera systems with variable

positional relationships between them, which can establish a common reference coordinate system without having any cameras dedicated to the viewing a reference target structure. Accordingly, the combination of the '515 *January* reference and the '382 *Jackson* reference fails to render obvious the limitations of Claim 2 under 35 U.S.C. § 103(a).

c. Claim 3

Claim 3 depends from amended Claim 2, discussed above, and accordingly, is seen as allowable under 35 U.S.C. § 103(a) over the cited combination of the '515 *January* and '382 *Jackson* references for the same reasons.

d. Claim 20

Claim 20 has been cancelled without prejudice with respect to any future filings.

e. Claim 22

Claim 22, as amended, sets forth a method for configuring a vehicle wheel alignment system. The cited combination of the '515 *January* reference and the '382 *Jackson* reference fails to render obvious the method set forth in Claim 22, and specifically, fails to suggest to one of ordinary skill in the art the steps of positioning first and second camera systems to acquire images of optical targets associated with a vehicle, and of a common reference target. The camera systems are positioned such that at least one optical target and the common reference target are disposed in the same field of view for at least one camera in each of the first and second camera systems (See: Para. [0028]). The acquired images are used, after each positioning movement of the cameras, to establish a common reference coordinate system between the camera systems, which have a variable positional relationship.

The system disclosed in the '515 *January* reference does not acquire images of the optical targets associated with the vehicle when images of the reference targets are acquired. Similarly, the system of the '382 *Jackson* reference acquires images of the reference target only from a dedicated camera having a dedicated field of view which is different from that of the cameras used to acquire images of the optical targets associated with the vehicle. (See: Figures 6a, 6b, 7, and 8). Accordingly, the combination of the '515 *January* reference and the '382 *Jackson* reference fails to render obvious the method of Claim 22 under 35 U.S.C. § 103(a).

f. Claim 23

The limitations of Claim 23 have been incorporated into parent Claim 22, and Claim 23 has been cancelled without prejudice with respect to future filings.

g. Claim 24

Dependent Claim 24 adds additional limitations to the method of Claim 22, and accordingly, is seen as allowable over the cited references for the same reasons as parent Claim 22.

h. Claim 27

Dependent Claim 27 adds additional limitations to the method of Claim 26, and accordingly, is seen as allowable over the cited references for the same reasons as parent Claim 26.

3. Allowable Subject Matter

Claim 9 has been rewritten in independent form to include all of the limitations of base Claim 1, from which it depends. Claim 9 is now believed to be in allowable form

and to overcome the Examiner's objection on the grounds of dependency from a rejected base claim.

4. New Claims

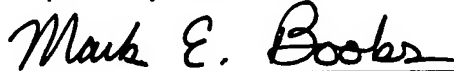
New Claim 28 depends from Claim 2, and requires that the first and second camera systems each include at least one alignment camera configured to view an optical target associated with the vehicle and a least one fixed reference target structure in the same field of view, as described in Para. [0028]. This feature is neither anticipated or rendered obvious by the prior art, and accordingly, Claim 28 is believed allowable for this reason and for the same reasons as parent Claim 2.

New Claims 29 and 30 each depend from allowable Claim 9, and accordingly, are seen as allowable over the cited references for at least the same reasons as parent Claim 9.

5. Conclusion

If for any reason the Examiner is unable to allow the application on the next Office Action and feels that an interview would be helpful to resolve any remaining issues, the Examiner is respectfully requested to contact the undersigned attorney for the purpose of arranging such an interview.

Respectfully submitted,



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